Rabies in Llamas and Alpacas

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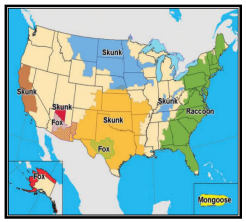
Integrated Livestock Management

Background and Significance

Rabies is a virus that causes a progressive encephalitis (inflammation of the brain) ultimately resulting in death. All warm-blooded mammals including humans are susceptible to this virus. In the United States, vaccination and eradication programs has eliminated endemic canine rabies so that it is now only maintained in several wildlife species such as skunks, raccoons, foxes, coyotes, and bats.

Rabies is maintained by a carrier species in well defined geographical regions, however environmental and habitat changes and human movement of wild animals has led to the spread of rabies into previously unaffected areas. Over the past several years, Colorado has experienced an increasing number of skunks infected with rabies as their territory has expanded. Bat rabies has been present in Colorado for many years.



Distribution of rabies in wild animals, 2008.

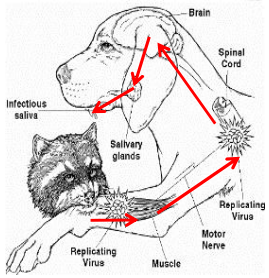
Manifestations of Disease

Rabies can manifest in several ways, however the disease is typically progressive with a worsening of signs over about 10 days. If not euthanized, an infected animal will die of respiratory failure.

CLINICAL SIGNS ASSOCIATED WITH RABIES

- Nervous or agitated
- Vicious unprovoked attacks
- Hypersalivation, difficulty swallowing
- Roaming, separation from the herd
- Unusual sexual activity
- Abnormal vocalizations
- Ascending paralysis normally beginning in the hind limbs
- Signs of colic
- Depression
- Self mutilation
- Sensitivity to light

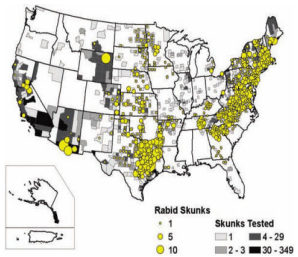
➢ **Animals can exhibit any combination of these or other neurological signs.**
➢ **Contact your veterinarian if you observe suspicious neurological signs in any of your animals**
➢ **The signs are nonspecific. Any animal showing suspicious behavior or other neurological signs should be isolated so that they may be observed carefully**



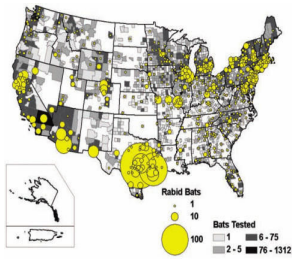
Rabies virus enters through a bite or scratch. The virus travels through the nerves to the central nervous system and brain. Eventually the virus migrates to the salivary glands and is secreted in the saliva.

Transmission

In animals, rabies is transmitted through bite wounds and open cuts in the skin or mucous membranes. The virus is primarily found in the saliva of infected animals, however it can be found in other tissues such as nervous tissues. Being in the same area or petting an animal that is infected with the rabies virus is not considered a high risk exposure.



Reported cases of rabies in skunks, by county, 2008.

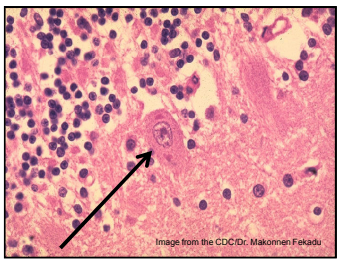


Reported cases of rabies in bats, by county, 2008.

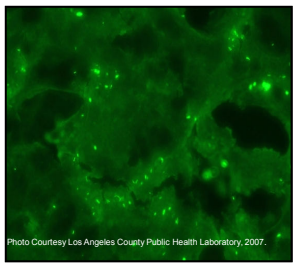
Diagnosing Rabies Infection

Currently rabies in animals can only be diagnosed on postmortem examination of the brain. Due to the disease process, antibody titers are not helpful to determine if an animal has been exposed or infected with rabies.

Contact your veterinarian if you suspect one of your animals has been bitten by a skunk or is exhibiting signs suggestive of rabies.



Characteristic negri bodies present within a Purkinje cell of the cerebellum



The rabies virus is seen as small fluorescent clusters throughout the sample.

Rabies Prevention

Vaccination

- There are NO rabies vaccines approved for use in camelids.
  - The state veterinarian may treat vaccinated camelids as nonvaccinated animals which may result in quarantining or euthanizing any exposed animals.
- Vaccinations do not have to be performed by your veterinarian.
  - However animals vaccinated by nonveterinarians may be treated differently by the Colorado Department of Agriculture, the CO Department of Public Health and Environment, and/or local health officers.
- Large animal vaccines available:
  - IMRAB 3 or IMRAB Large Animal (Merial, Inc)
  - Defensor 3 (Pfizer)
  - Rabdomun or Prorab-1 (Intervet, Schering-Plough)
- Follow the label directions for cattle or sheep for administration route and dose.
- Camelids over 3 months of age can be vaccinated.
- Vaccine boosters should be given yearly after the initial vaccination.
- The vaccine is not known to cause abortions in other species so we presume it to be safe for use in pregnant camelids.
- Based on testing in other animals, the vaccines have been shown to work well at preventing rabies.

Other

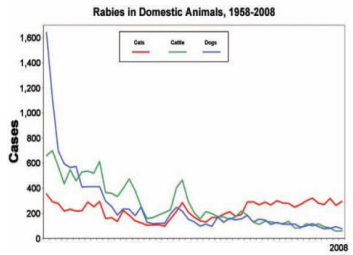
- Do not feed or handle wildlife
- Do not translocate rabies reservoir species such as skunks, raccoons, etc.
- Exclude bats from homes, barns, etc. to reduce contact.
- Rabies virus does not survive for long periods in the environment and is easily destroyed by soap and water or common household disinfectants.

Discussion

Before beginning a rabies vaccination program for your camelids, we recommend that you discuss the pros and cons with your veterinarian. The risk of exposure is still very low in most areas of Colorado.

Please contact your veterinarian or the CSU Veterinary Teaching Hospital if you have questions.

Remember to keep your dogs and cats vaccinated too!



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